

REMARKS/ARGUMENTS

I. General Remarks

Applicants acknowledge with appreciation the Examiner's detailed reply to Applicants' response to the Examiner's previous office action. Applicants have attempted to address the Examiner's continued concerns and rejections by further amendment to the claims and by further remarks as indicated below.

Please re-consider the application in view of the following remarks.

II. Disposition of Claims

Claims 1, 3-16, 18-41, 43-51, and 53-89 are pending in this application. In this Response, claims 2, 3, 5, 12-15, 17, 18, 21-26, 28, 29, 32, 36, 37, 42, 44, 48, 49, 52, 57, 59-80, and 86-89 are canceled, and claims 1, 6-8, 16, 19, 20, 27, 30, 31, 33, 34, 35, 38-41, 43, 45-47, 50, 51, 53-56, 58, and 81-85 are amended.

III. Allowable Claim

Applicants acknowledge with appreciation that the Examiner has indicated that Claim 4 is allowable over the art of record.

IV. Claim Rejections—35 U.S.C. § 112

The Examiner has rejected claims 12, 13, 25, 26, 48, and 49 under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. Specifically, the Examiner has explained that these claims contain "subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention." Further, the Examiner has explained that, "These claims teach the ester is made from internal olefins, which is not supported by the specification as originally filed, and is thus new matter."

These claims have been canceled, rendering this rejection moot.

V. Claim Rejections—35 U.S.C. § 102

A. WO 95/26386

The Examiner has rejected claims 50, 51, 53-55, 57, 58, and 85 under 35 U.S.C. § 102(b) as anticipated by WO 95/26386. Specifically, the Examiner has explained that “WO teaches an invert emulsion drilling fluid which comprises a triglyceride ester oil in admixture with another ester, wherein the triglyceride ester and ester are within the scope of the present invention (see page 4, lines 8-15, page 4, line 29-page 5, line 9 and Table 3).” The Examiner states: “Applicants method of making the ester does not distinguish, since in product by process claims, the process of making does not distinguish the product...”

Applicants have amended the claims to no longer be in product-by-process form but rather to be in the form of a method for preparing a drilling fluid, or a method for using a drilling fluid prepared according to a certain method.

B. Patel (US 2001/0009890 A1)

The Examiner has rejected claims 1, 3, 5-9, 12-16, 18-22, 25-26, 30-33, 36-38, 43, 44, 48-49, and 81-84 under 35 U.S.C. 102(e) as anticipated by Patel (US 2001/0009890 A1). The Examiner has indicated that “Patel teaches an invert emulsion drilling fluid which comprises esters and a C16-18 isomerized internal olefin (see the examples)” and that “Patel further teaches the combination of various esters and hydrocarbons such as mineral oils (see claims 1 and 9).” The Examiner has stated that “Such mineral oils would comprise paraffins according to the present invention” and that “Combinations of glycerides of fatty acids and esters are taught at paragraph [0018].” The Examiner has indicated that “Applicants method of making the ester does not distinguish, since in product by process claims, the process of making does not distinguish the product.”

As amended herein, none of claims 1,3, 5-9, 12-16, 18-22, 25-26, 30-33, 36-38, 43, 44, 48-49, and 81-84 are product by process claims, but rather are methods of making a drilling fluid or are methods of drilling a borehole including a method of making a drilling fluid.

VI. Claim Rejections—35 U.S.C. § 103

A. Patel (US 2001/0009890 A1) in view of Mueller (6165946) and Rines H935

The Examiner has rejected claims 1, 10, 11, 14, 23, 24, 38-42, 45-47, 56, 81, 82, and 84 under 35 U.S.C. § 103(a) as obvious from Patel (US 2001/0009890 A1) in view of Mueller (6165946) and Rines H935. The Examiner states that, “Patel teaches a drilling fluid which comprises esters and a C16-C18 isomerized olefin.” The Examiner also states that “Patel further teaches the combination of various esters and hydrocarbons such as mineral oils” and that “such mineral oils would comprise paraffins according to the present invention.” The Examiner states that “Combinations of glycerides of fatty acids and esters are taught at paragraph [0018].” The Examiner admits that “Patel differs from the present invention in that the use of 2-ethylhexanol in the formation of the esters is not disclosed, and the specific composition of the mineral is not disclosed.” However, the Examiner considers that the “use of 2-ethylhexanol would be obvious to one of ordinary skill in the art, given the teaching of Patel that alcohols of C1-12 length may be used in the formation of the esters (claim 1), particularly in view of the teaching of Mueller that esters made from 2-ethylhexanol may be used in invert emulsion drilling fluids. (see first Table in column 22).”

Further, the Examiner indicates that the “use of low aromatic mineral oils as the continuous phase of an invert emulsion drilling fluid is taught by Rines (column 4, lines 45-58 show less than 0.5 wt% aromatic), which improves environmental compatibility.” Also, according to the Examiner, “use of a low aromatic mineral oil in the invert emulsion of Patel, such as that taught by Rines, comprising paraffins and olefins of low carbon chain length in order to protect the environment would be an obvious variation to one of ordinary skill in the art, particularly in view of the teaching of a low toxicity mineral oil by Patel.”

Applicants respectfully submit that the benefit of Applicants’ invention is needed for the combination of these three references as indicated by the Examiner. Applicants respectfully submit that improper hindsight reasoning must be used in combining these three references to render Applicants’ invention obvious.

B. Lin (5569642), in view of Mueller (6165946)

The Examiner has again rejected claims 27-37 and 83 under 35 U.S.C. § 103(a) as obvious from Lin (5569642), in view of Mueller (6165946). The Examiner has stated that “Lin

teaches the use of a mixture of linear and branched paraffins for use as the continuous phase of a drilling fluid.” Further, the Examiner has indicated that “Lin teaches that the paraffin mixture may be used in combination with an ester in order to improve the performance of the fluid or lower costs.(column 3, lines 39-43).” The Examiner admitted that “Lin differs from the present invention in not disclosing an example of such esters.” However, the Examiner stated that “Mueller teaches the use of ester oils as the continuous phase of a drilling fluid, which comprises esters of 2-ethylhexanol.(column 22)” The Examiner has concluded that “It would be obvious to one of ordinary skill in the art to use known drilling fluid ester formulations, such as that of Mueller, in the drilling fluid of Lin, given the teaching of Lin that esters may be used therein in order to improve drilling performance, or lower cost.”

Again, Applicants respectfully submit that the benefit of Applicants’ invention is needed for the combination of these two references as indicated by the Examiner. Applicants respectfully submit that improper hindsight reasoning must be used in combining these two references to render Applicants’ invention obvious.

Mueller is directed to:

a process for facilitating the disposal of flowable and pumpable working fluids based on emulsifier-containing W/O invert emulsions--more particularly corresponding auxiliaries of the type used in geological exploration, such as oil-based w/o invert drilling muds--and for the simplified cleaning of solid surfaces soiled therewith, if desired using flowable spraying aids, characterized in that, by selecting and adapting the emulsifiers/emulsifier systems to the oil phase of the invert emulsion, temperature-controlled phase inversion is achieved at temperatures below the in-use temperatures of the w/o invert emulsions, although at the same time this temperature-controlled phase inversion takes place above the freezing point of the aqueous phase. Column 8, lines 29-42 (emphasis added).

The disposal and cleaning are said to be carried out “at temperatures in and/or below the phase inversion temperature range.” Column 8, lines 43-45. Thus, Mueller is concerned with phase inversion temperature of the fluid and adjustments and use of that temperature to facilitate removal of the fluid from solid surfaces after use, such as removal of the fluid from rock cuttings after use of the fluid in drilling. Column 8. Applicants respectfully submit that this teaching is not suggestive of use of fluids disclosed therein with fluids disclosed in Lin, particularly given that Lin states at column 1, lines 25-28 that, “Fatty acid ester based oils have excellent environmental properties, but drilling fluids made with these esters tend to have lower densities and are prone to hydrolytic instability.”

VII. Claim Rejections—Double Patenting

The Examiner also provisionally rejected claims 1, 3, 5-7, 14-16, 18-23, 25, and 26 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 21 of copending Application No. 10/175,272 (now U.S. Patent No. 6,887,832 B2, issued May 3, 2005). The Examiner has explained that these claims are not patentably distinct from the '272 claim 21 because, "although the claim of 10/175,272 differs in teaching other ingredients of the drilling fluid, it teaches the same ester and olefin in the invert emulsion drilling fluid of the present invention, and would render the claims of the present invention obvious to one of ordinary skill in the art." The Examiner has added that, "The variation of the amounts of ester to olefin as in claims 6 and 7, in order to optimize the properties of the drilling fluid, such as rate of penetration, would be an obvious variation to one of ordinary skill in the art."

Applicants respectfully traverse this rejection by the Examiner. In Applicants view, the claims are not obvious from claims in the '832 patent. However, Applicants have submitted a terminal disclaimer herewith, rendering this rejection moot.

VII. Summary

Applicants respectfully submit that the claims as amended are now in condition for allowance and Applicants respectfully request the Examiner to allow the application to proceed to issue.

Respectfully submitted,

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